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Set Items Description

S1 24715042 S (SECOND OR MULTI? OR HETEROGENEOUS OR DIFFERENT OR VARIED OR VARIOUS OR SEPARATE OR MANY OR MANIFOLD OR NUMEROUS OR MULTIPL? OR MULTITUDE OR SEVERAL OR MANY OR PLURAL? OR VARIET? OR RANGE? ? OR ASSORT???? OR DIVERSE)  
S2 1417507 S (VALVE? ? OR THROTTLE? ? OR VALVULAR OR CONTROLLER? ? OR POPPET? ? OR VALVATE? ? OR CHOKE? ? OR GATE? ? OR ACCELATOR? ?)  
S3 93318 S S1(3N)S2  
S4 583627 S (SENSE??? OR SENSING OR MEASURE??? OR MEASURING OR DETECT??? OR NOTIC? OR DETERMIN? OR OBSERV? OR MONITOR??? OR CHECK? OR PRESEN????)(2N)(LIQUID? ? OR FLUID OR WATER OR FLOW???)  
S5 3503 S S4(5N)S2  
S6 29590 S S2(3N)(OPEN???)  
S7 128 S S5(10N)S3  
S8 2793 S S6(10N)(STATUS OR CHANGE??? OR CHANGING OR STATE OR ADJUST? OR ADAPT? OR REGULAT? OR UPDAT? OR MODIFY?)  
S9 0 S S8(10N)S7  
S10 391 S S5 AND S3  
S11 5 S S10 AND S8

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### Subject summary

? t /5,k/all

11/5,K/1 (Item 1 from file: 60) [Links](#)

ANTE: Abstracts in New Tech & Engineer

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0001285395 IP Accession No: 20081172476

Closed center programmed valve system with load sense

Zeuner, Kenneth W; Jarman, Alonzo B

, USA

Publisher Url: <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netaht ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=42 76811.PN.&OS=pn/4276811& RS=PN/4276811>

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: ANTE: Abstracts in New Technologies and Engineering

Abstract:

A closed center programmed valve system having a load sense fluid source for control of the raising and lowering of load means by a raise and a lower normally closed two stage valve assembly. Each of the second stages of the valve assemblies has a poppet with a parabolic control which is dimensioned to provide substantially linear flow rate change for minimized shock when the respective valve is actuated to the valve closed state. The load sense for the load means is taken from the outlet of the raise second stage without the requirement of a separate actuated valve or land with a load sense signal being applied to the fluid source during the time the raise valve assembly is actuated to the valve open state.

Descriptors: Valves; Assembly; Fluid dynamics; Fluid flow; Fluids; Control valves; Outlets; Control systems; Flow rate; Land

Abstract:

A closed center programmed valve system having a load sense fluid source for control of the raising and lowering of load means by a raise and a lower normally closed two stage valve assembly. Each of the second stages of the valve assemblies has a poppet with a parabolic control which is dimensioned to provide substantially linear... is taken from the outlet of the raise second stage without the requirement of a separate actuated valve or land with a load sense signal being applied to the fluid source during the time the raise valve assembly is actuated to the valve open state.

11/5,K/2 (Item 2 from file: 60) [Links](#)

ANTE: Abstracts in New Tech & Engineer

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0000948046 IP Accession No: 2008463846

Positive check valve control unit for color change system

Wiggins, Richard F

, USA

Publisher Url: <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netaht ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=40 83493.PN.&OS=pn/4083493& RS=PN/4083493>

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: ANTE: Abstracts in New Technologies and Engineering

Abstract:

A positive check valve control unit is disclosed for use in the color change system of an industrial paint spray installation to insure the proper functioning of the system. The control unit of the invention comprises a plurality of check valves connected to a valve body provided with a common outlet duct. Each check valve includes a passage with a discharge opening for communication with the common outlet duct. A ball check is movably positioned in the passage and is urged by biasing means against the opening to protrude into the common outlet duct and close the passage. A unique feature of the present invention is the provision of a cam plunger in the common outlet duct, positioned to engage and displace the protruding ball checks against the biasing means, to positively open the passages thereby allowing paint or other process fluids to flow through the check valve and out the outlet duct. Actuating means connected to the cam plunger selectively advances the cam into the ball check displacing position when it is desired to open all the check valves as during a color change cycle.

Descriptors: Valves; Outlets; Ducts; Color; Plungers; Inventions; Displacement; Painting ; Fluid dynamics; Fluid flow; Fluids; Discharge; Paint spray

Abstract:

...insure the proper functioning of the system. The control unit of the invention comprises a plurality of check valves connected to a valve body provided with a common outlet duct. Each check valve includes ... biasing means, to positively open the passages thereby allowing paint or other process fluids to flow through the check valve and out the outlet duct. Actuating means connected to the cam plunger selectively advances the cam into the ball check displacing position when it is desired to open all the check valves as during a color change cycle.

11/5,K/3 (Item 3 from file: 60) [Links](#)

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0000671528 IP Accession No: 2008316548

Mobile vehicle emissions sampling system

Ullman, Terry L; Webb, Cynthia C

, USA

Publisher Url: [http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netaht/ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=60 16711.PN.&OS=PN/6016711&RS=PN/6016711](http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netaht/ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=60%2016711.PN.&OS=PN/6016711&RS=PN/6016711)

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: ANTE: Abstracts in New Technologies and Engineering

Abstract:

A sampling device for collecting exhaust samples that are proportional in amount to the total amount of exhaust during a given sampling period. A sample flow is pumped through the device, which has a filter for collecting particulates and a sample bag for collecting gas exhaust. The sampling device permits a baseline dilution air flow rate to be fixed by having a pair of parallel valves between the filter and the pump(s). During baselining, one valve is open and adjusted and one is closed and only dilution air flows through the device. Then, for sample acquisition, the second valve is also opened. A processing unit monitors the actual sample flow, compares it to a target flow rate, and adjusts the second valve as needed to maintain the desired proportionality.

Descriptors: Sampling; Valves; Exhaust; Air flow; Adjustment; Monitors; Flow rate; Vehicles; Marketing; Particulates; Acquisitions

Abstract:

...a pair of parallel valves between the filter and the pump(s). During baselining, one valve is open and adjusted and one is closed and only dilution air flows through the device. Then, for sample acquisition, the second valve is also opened. A processing unit monitors the actual sample flow, compares it to a target flow rate, and adjusts the second valve as needed to maintain the desired proportionality.

Descriptors: Sampling; Valves; Exhaust; Air flow; Adjustment; Monitors; Flow rate; Vehicles; Marketing; Particulates; Acquisitions

Identifiers:

11/5,K/4 (Item 1 from file: 8) [Links](#)

Ei Compendex(R)

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0011203290 E.I. COMPENDEX No: 1983060074882

ANALYTICAL STUDY OF THE DYNAMICS AND STABILITY OF A SPRING LOADED SAFETY VALVE.

Singh, Avtar

Corresp. Author/Affil: Singh, Avtar

Nuclear Engineering and Design ( Nucl Eng Des ) 1982 72/2 (197-204)

Publication Date: 19821201

CODEN: NEDEA ISSN: 0029-5493

Item Identifier (DOI): [10.1016/0029-5493\(82\)90215-1](https://doi.org/10.1016/0029-5493(82)90215-1)

Document Type: Journal Record Type: Abstract

Language: English Summary Language: English

Number of References: 8

Spring loaded self-actuating safety valves are employed as part of the overpressure protection systems in various industrial applications. In order to design and predict their performance it is necessary to study the dynamic behavior of the valve over a range of fluid and system conditions. A one-dimensional model has been developed to study the effects of different valve parameters such as the spring-mass characteristics, geometry of internal parts, adjustment ring settings, bellows etc. which influence the dynamic behavior and stability of the valve. Analytical results for steam flow conditions are presented to demonstrate the relative effects of these parameters on the valve opening time, maximum lift, blowdown (upstream pressure differential between the valve opening and closing) and any oscillations of the valve stem. If the valve is not properly backpressure compensated, it may become unstable as the stagnation pressure at the valve inlet decreases. Lowering of the guide adjustment ring position or raising the nozzle adjustment ring generally results in improved stability, shorter valve opening time, higher lift and longer blowdown. The effect of damping on the valve stability is also demonstrated. The model can be used to evaluate the design of safety valves and damping devices to eliminate unstable valve dynamic behavior.

Descriptors: FLOW OF FLUIDS - Flow Interactions; \*SAFETY VALVES

Classification Codes:

619 (Pipes, Tanks & Accessories; Plant Engineering Generally)

914 (Safety Engineering)

...design and predict their performance it is necessary to study the dynamic behavior of the valve over a range of fluid and system conditions. A one-dimensional model has been developed to study the effects of different valve parameters such as the spring-mass characteristics, geometry of internal parts, adjustment ring settings, bellows etc. which influence the dynamic behavior and stability of the valve. Analytical results for steam flow conditions are presented to demonstrate the relative effects of these parameters on the valve opening time, maximum lift... ..the valve inlet decreases. Lowering of the guide adjustment ring position or raising the nozzle adjustment ring generally results in improved stability, shorter valve opening time, higher lift and longer blowdown. The effect of damping on the valve stability is...

Descriptors:

11/5,K/5 (Item 1 from file: 2) [Links](#)

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INSPEC

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03013767 INSPEC Abstract Number: A83026417, C83012369

Title: An analytical study of the dynamics and stability of a spring loaded safety valve

Author Singh, A.

Author Affiliation: EPRI, Palo Alto, CA, USA

Journal: Nuclear Engineering and Design vol.72, no.2 p. 197-204

Publication Date: 1982 Country of Publication: Netherlands

CODEN: NEDEAU ISSN: 0029-5493

U.S. Copyright Clearance Center Code: 0029-5493/82/0000-0000/\$02.75

Language: English Document Type: Journal Paper (JP)

Treatment: Theoretical (T)

Abstract: Spring loaded self-actuating safety valves are employed as part of the overpressure protection systems in various industrial applications. In order to design and predict their performance it is necessary to study the dynamic behaviour of the valve over a range of fluid and system conditions. A one-dimensional model has been developed to study the effects of different valve parameters such as the spring-mass characteristics, geometry of internal parts, adjustment ring settings, bellows, etc. which influence the dynamic behaviour and stability of the valve. Analytical results for steam flow conditions are presented to demonstrate the relative effects of these parameters on the valve opening time, maximum lift, blowdown (upstream pressure differential between the valve opening and closing) and any oscillations of the valve stem. If the valve is not properly backpressure compensated, it may become unstable as the stagnation pressure at the valve inlet decreases. Lowering of the guide adjustment ring position or raising the nozzle adjustment ring generally results in improved stability, shorter valve opening time, higher lift and longer blowdown. The effect of damping on the valve stability is also demonstrated. The model can be used to evaluate the design of safety valves and damping devices to eliminate unstable valve dynamic behaviour. ( 8 Refs)

Subfile: A C

Descriptors: fission reactor cooling and heat recovery; fission reactor safety; power system control; stability; valves

Identifiers: spring loaded safety valve; overpressure protection systems; one-dimensional model; stability; steam flow; guide adjustment ring; nozzle adjustment ring; damping

Class Codes: A2843B (Cooling and heat recovery); A2844 (Fission reactor protection systems, safety and accidents);

C1320 (Stability); C3260 (Actuating and final control devices); C3340B (Heat systems)

Abstract: ...design and predict their performance it is necessary to study the dynamic behaviour of the valve over a range of fluid and system conditions. A one-dimensional model has been developed to study the effects of different valve parameters such as the spring-mass characteristics, geometry of internal parts, adjustment ring settings, bellows, etc. which influence the dynamic behaviour and stability of the valve. Analytical results for steam flow conditions are presented to demonstrate the relative effects of these parameters on the valve opening time, maximum lift... ...the valve inlet decreases. Lowering of the guide adjustment ring position or raising the nozzle adjustment ring generally results in improved stability, shorter valve opening time, higher lift and longer blowdown. The effect of damping on the valve stability is...

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